

FLEXIBLE, SELF CONFORMING WORKPIECE SUPPORT SYSTEM**Abstract of the Disclosure**

5

An apparatus and accessories are disclosed for a flexible support apparatus 100, 900 using elongated support members 110 to support a face of a workpiece 10 and respective protrusions 335. The elongated support members 10 110 are arranged through at least one plane of perforated material 120, where the elongated support members 110 are profiled against the workpiece 10 and respective protrusions 335. The profile of the elongated support members 110 is created by contacting forces 132 generated by bringing the 15 workpiece 330 and the plurality of elongated support members 110 together. A holding force is then applied to the elongated support members 110 to support the workpiece 10 against forces applied by a workstation. Fluid 902 is used to raise expansion members to raise the plurality of 20 elongate support members 110. A perforated plate 920 is used to control the flow of fluid 902 between a fluid cavity 910 and the plurality of expansion members 904. Accessories to improve performance and reliability include a protective collar for protection from foreign materials 870 (solder 25 paste) and a reinforcing member 40, 44 to reinforce thin, flexible workpieces 10.